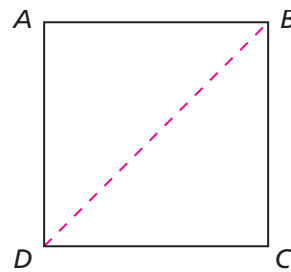
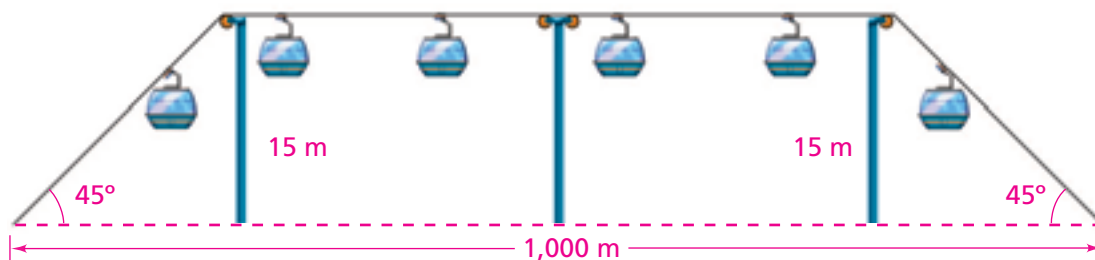


6. Square  $ABCD$  has sides of length 1 unit. The diagonal  $BD$  is a line of reflection.
- How do the triangles  $ABD$  and  $BDC$  compare?
  - Find the angle measures for one of the triangles. Explain how you found each measure.
  - What is the length of the diagonal? Explain.
  - Suppose square  $ABCD$  had sides of length 5 units instead of 1 unit. How would this change your answers to parts (b) and (c)?

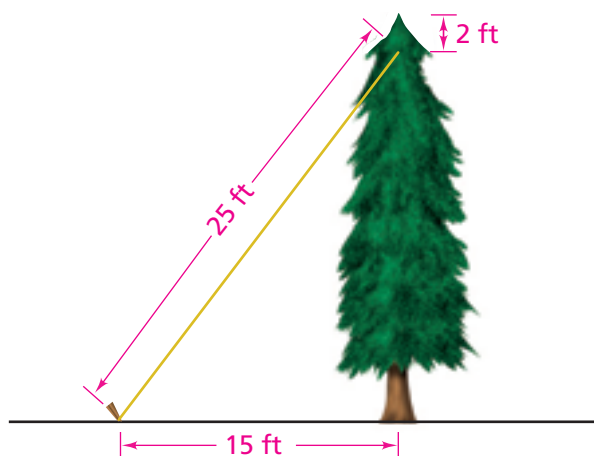


7. A right triangle with a  $45^\circ$  angle is called a 45-45-90 triangle.
- Are all 45-45-90 triangles similar to each other? Explain.
  - Suppose one leg of a 45-45-90 triangle is 5 units long. Find the perimeter of the triangle.
8. The diagram shows an amusement park ride in which tram cars glide along a cable. How long, to the nearest tenth of a meter, is the cable for the ride?

Not drawn to scale

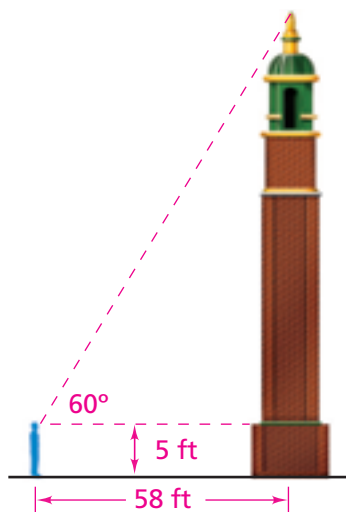


9. At Emmitt's Evergreen Farm, the taller trees are braced by wires. A wire extends from 2 feet below the top of a tree to a stake in the ground. What is the tallest tree that can be braced with a 25-foot wire staked 15 feet from the base of the tree?



10. As part of his math assignment, Denzel has to estimate the height of a tower. He decides to use what he knows about 30-60-90 triangles.

Denzel makes the measurements shown below. About how tall is the tower? Explain.



Not drawn to scale